

Blue

Work Order ID 55782

February 1, 2010 10:11:43 AM



Page 1

Item ID: D206-667-203BL

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft, Blue

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/18/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:



Date: 10-2-01 Tooling:

Date:

Run Start



QC:

Date: SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-243

C

100



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-203 CHG003

5/10/2005

10-2-01 10/02/05

110



BENDING MACHINE - CROSSTUBES

CNC Bend 2

CNC Alpha 160 Bender

Memo

0.00

Bend tube as per Dwg D206-667-243 using CNC bender program 206L-AF and Folio FT

10-2-02 10-02-02

120



QC15- Crosstube Dimensional Check

QC

Quality Control

Memo

0.00

0.00

5/10/2005

10-2-02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Date:

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Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



Crosstubes

0.00

Crosstubes

Memo

0.00

1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243

6-Drill Fwd rivet holes using drill Jig DT8789FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8789 as per Dwg D206-667-243.

8-C'sink holes as per Dwg D206-667-243.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-243 Inside of Cuff(Donot engrave on outside of tube)

10 -Deburr & Inspect for surface damage. Repair damage within limits as per Dwg

MB
10-02-02

MB
10-02-03

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QC: _____

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Stop

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QtyReject
QtyReject
NumberInsp.
Stamp

D206-667-243

140



Crosstubes Chemical Conversion

0.00

/ -

Au M
10-2-3

HandFXtube

Hand Finishing Crosstubes

150



QC

Quality Control

QC3- Inspect Part Finish

0.00

⇒ S1012104

0.00

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

⇒ S1012104

0.00

(X)

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Date:

Stop

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CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170



Outsource process - NDT per QSI038 4.1

0.00

PF 10-2-16

Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038Or
 Issue P/O: 11304
 LPI as per ASTM 1417
 Level 2 Attach copy of NDT results to work order

180



Packaging

0.00

PF 10-17 C

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

190



QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

Ensure results are as per Dwg D206-667-243

ML 10 02 17 O

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Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

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Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200



SprayPaint

0.00

m/ 10 02 17 01

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube grey as per QSI 005 4.2

2-Paint outside crosstube *Primer: 110918*Delfleet Blue B *113171*Clear Delfleet B *110896*

as per QSI 005 4.2

PRIME:

Start Time: *10:00*Finish Time: *11:00*

PAINT:

Start Time: *3:00*Finish Time: *4:00*

210



QC14- Inspect Spray Paint

0.00

85 10-02-18

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

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Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

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Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220



Crosstubes

0.00

M

10

02

18

Crosstubes

Memo

0.00

Crosstubes

1-Install nut plates as per Dwg D206-667-243.

230



Skidtubes

0.00

W

10

02

18

Skidtubes

Memo

0.00

Skidtubes

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI
015. Let cure for 12h after installation and prior to packaging. Note: (3) top
holes should be facing up.A/R Magnobond 6398: 112417 exp' 01/20112-Install supports and clamps as per Dwg D206-667-243. Torque clamps to 80-
100 in lb

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Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00

S.02/23



QC

Quality Control

250

Pick Kit

0.00



Packaging

Packaging

Memo

0.00

10-2-25

260

QC4- 100% Inspect kits for completeness

0.00



QC

Quality Control

Memo

0.00

S.02/25

10

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Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270



Packaging

0.00

10-2-26 CRSP

Packaging

Memo

0.00

Identify and pack for shipping as per PPP D206-667-203
Location: _____
PPP Rev: SD

280



QC21- Final Inspection - Work Order Release

0.00

10/03/03 AF

QC

Memo

0.00

Quality Control

10-2-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

February 1, 2010 10:11:48 AM

Page 1

Work Order ID: 55782



Parent Item: D206-667-203BL



Parent Item Name: Crosstube Aft, Blue

Start Date: 2/02/10

Required Date: 2/18/10

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN5-10A

Purchased

No

Each 102.0000 10.0000



10-2-250

Bolt

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST	102	
107013	8	
110363	2	
112314	1	
113149	1	
<u>113524</u>	90	

Each 172.0000 4.0000



10-2-250

AN5-32A

Purchased

No

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST	172	
106242	3	
106519	4	
110363	17	
<u>112933</u>	48	
113121	100	

Each 100.0000 48.0000



4

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---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN5-34A		Purchased	No				Each	146.0000	4.0000			
---------	--	-----------	----	--	--	--	------	----------	--------	--	--	--



Bolt

10-2-25 \$

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST	146	
104679	2	
107013	2	
<u>113149</u>	92	4
113226	50	

Q51075 \$
AN5149100563 d

AN960JD516



Washer

D206-667-203TRN



Crosstube Turning Detail

Purchased	No	Each	0.0000	18.0000	
-----------	----	------	--------	---------	--

M113524 10-2-25 \$

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

FG	4	
<u>53414</u>	1	
53415	1	
53649	1	
53651	1	

Thur 10-2-2 ①

W/O:		WORK ORDER CHANGES					
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Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2873-043		Manufactured	No				Each	47.0000	2.0000			

Nut Plate Assembly

Warehouse

Location

Main Warehouse

ST	47
45370	2
45422	1
<u>50002</u>	4
50871	20
53966	20

M 10 02 18

D2873-045



Nut Plate Assembly

Manufactured No

Each 65.0000 2.0000



Warehouse

Location

Main Warehouse

ST	65
45210	3
<u>50001</u>	22
53967	20
53968	20

M 10 02 18

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D2892-1		Manufactured	No				Each	51.0000	2.0000			

Support

Blue

Warehouse

Location

Main Warehouse

ST	51
41986	12
42785	20
53124	13
<u>53348</u>	6

D3595-063-450



Manufactured

No

Loc Qty

Loc Code

W 10/02/18

Warehouse

Location

Main Warehouse

LG	51.15767369
52447	51.1576737

Main Warehouse

ST	104.9689
38959	2
43210	2.59
46465	0.3789
<u>53775</u>	100

RUBBER CUSHION

Loc Qty

Loc Code

W 10 02 18

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MS20601-AD4W10		Purchased		No			Each	159.0000	14.0000			

RIVET

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	159	
110665	16	
111177	43	
113220	100	

WL 10 02 18

MS21042LS



Nut

Purchased No

Each 533.0000 / 4.0000



10-2-25 \$0

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	533	
110382	10	
111636	1	
112314	22	
113523	300	
113537	200	

8

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MS21920-22		Purchased		No			Each	62.0000	4.0000			

Clamp(per MIL-DTL-8783C)



<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	62	
109495	6	
110260	6	
<u>111210</u>	50	

W/ 10/02/18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

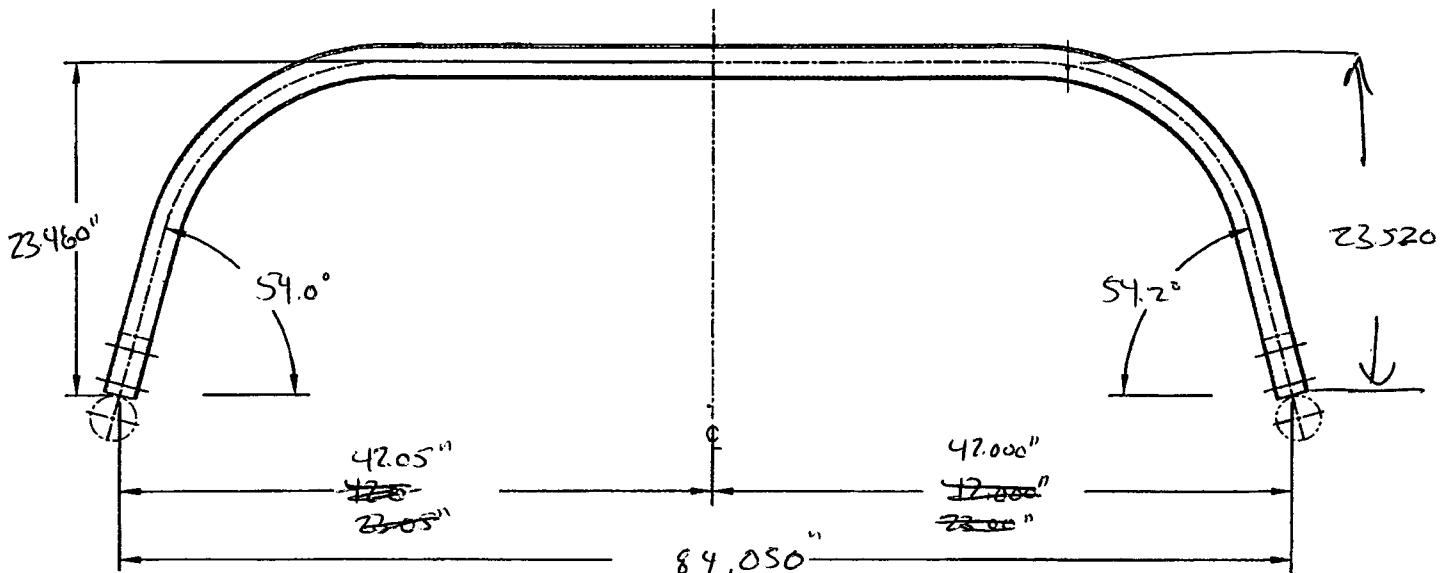
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	55782
Description: Crosstube High Aft (206L)	Part Number:	D206-667-203
Inspection Dwg: D206-667-243 Rev: C		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.1



Comments

QC15 Inspection	S
Date	10/02/02

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.17	Dwg Rev updated	KJ	
C	09.12.14	Dimensions update per Dwg Rev C	KJ	

Item	Qty	Part Number	Description
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

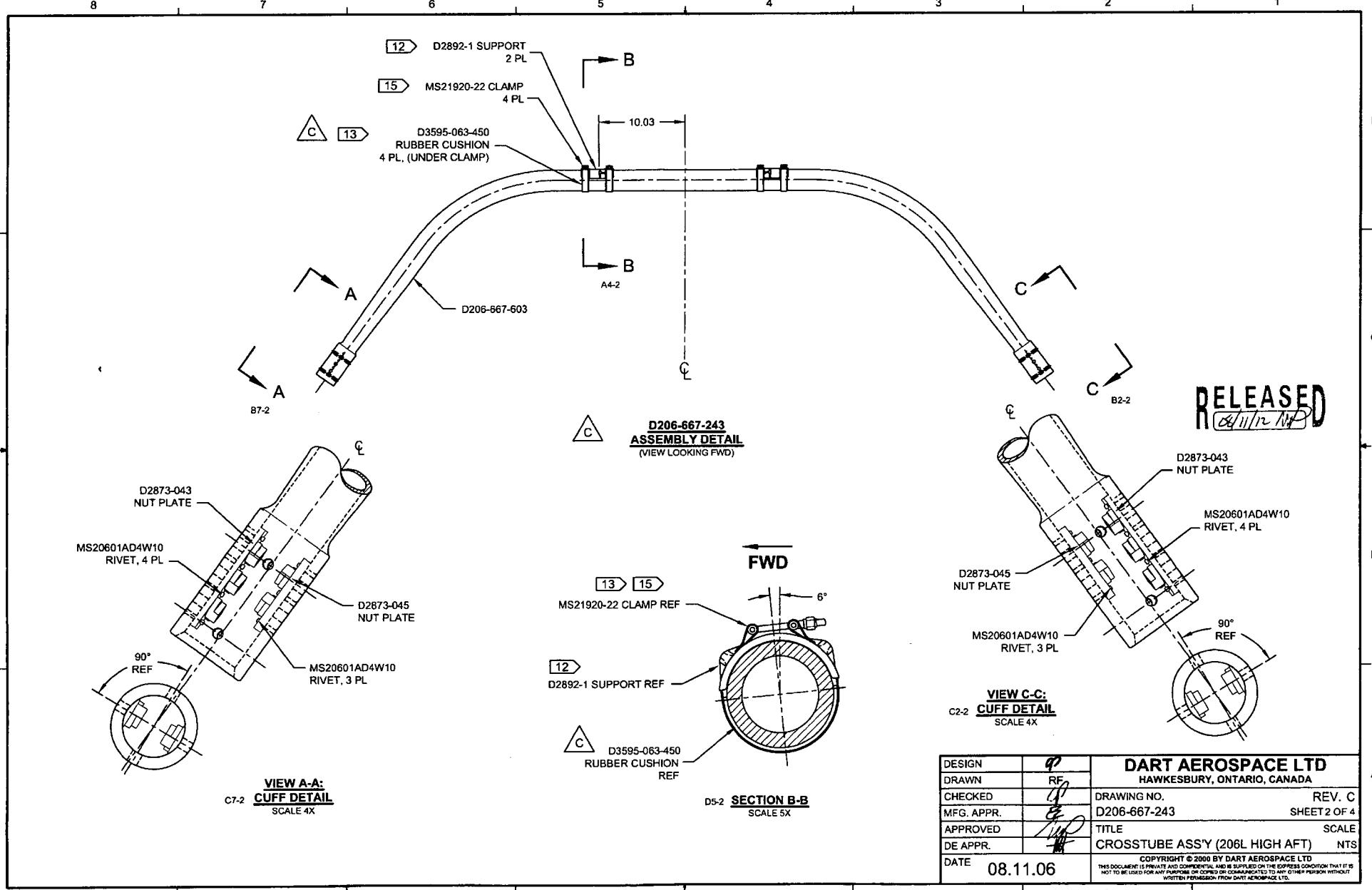
- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91 ± 0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED CO
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 55782

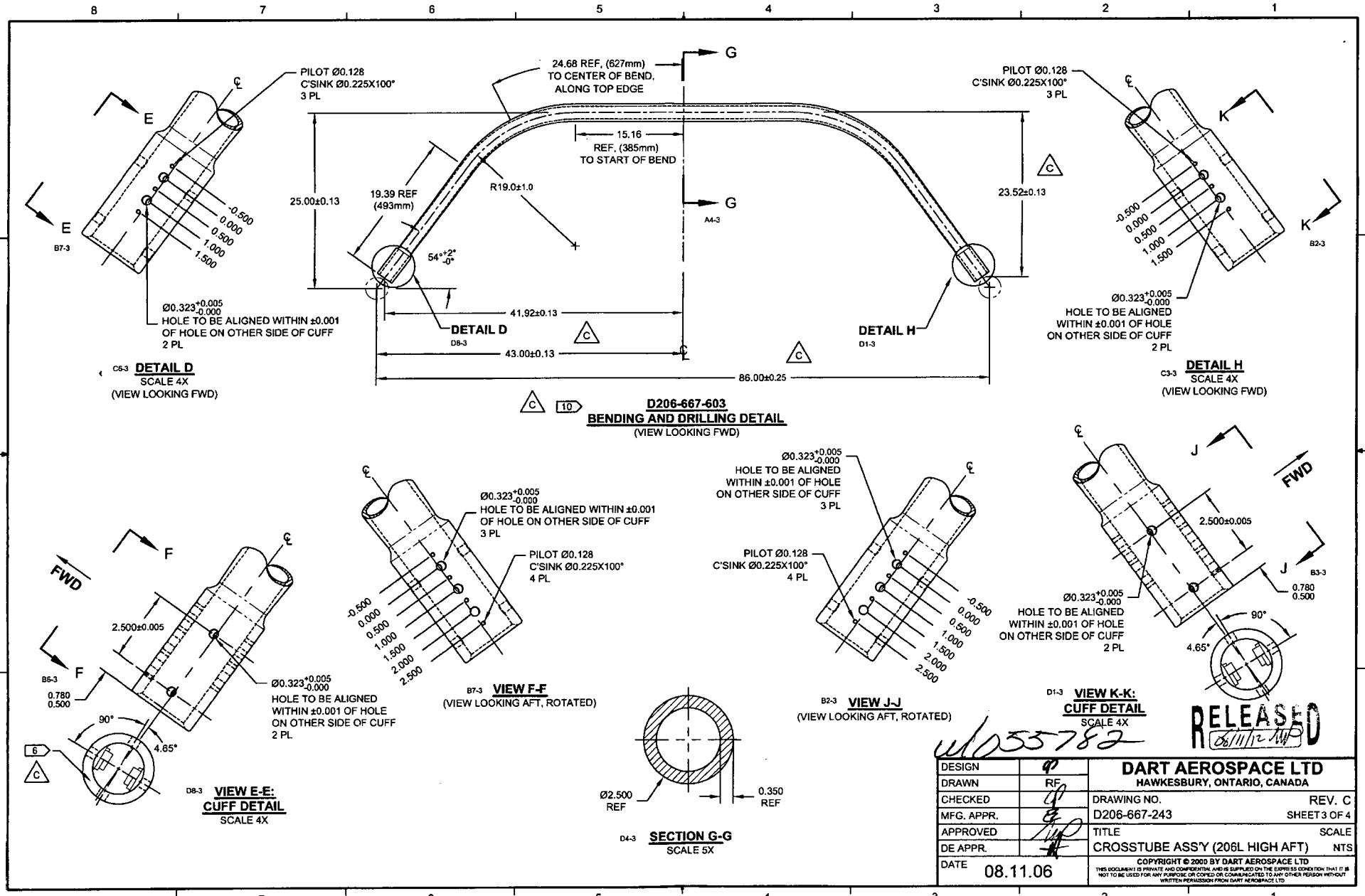
BJ 10-2-01

RELEASED
08/11/2017

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D8-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN AB-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BH7/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>Q</i>	DART AEROSPACE LTD	
DRAWN	<i>RF</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>DP</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>ED</i>	D206-667-243	SHEET 1 OF 4
APPROVED	<i>ED</i>	TITLE	SCALE
DE APPR.	<i>ED</i>	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

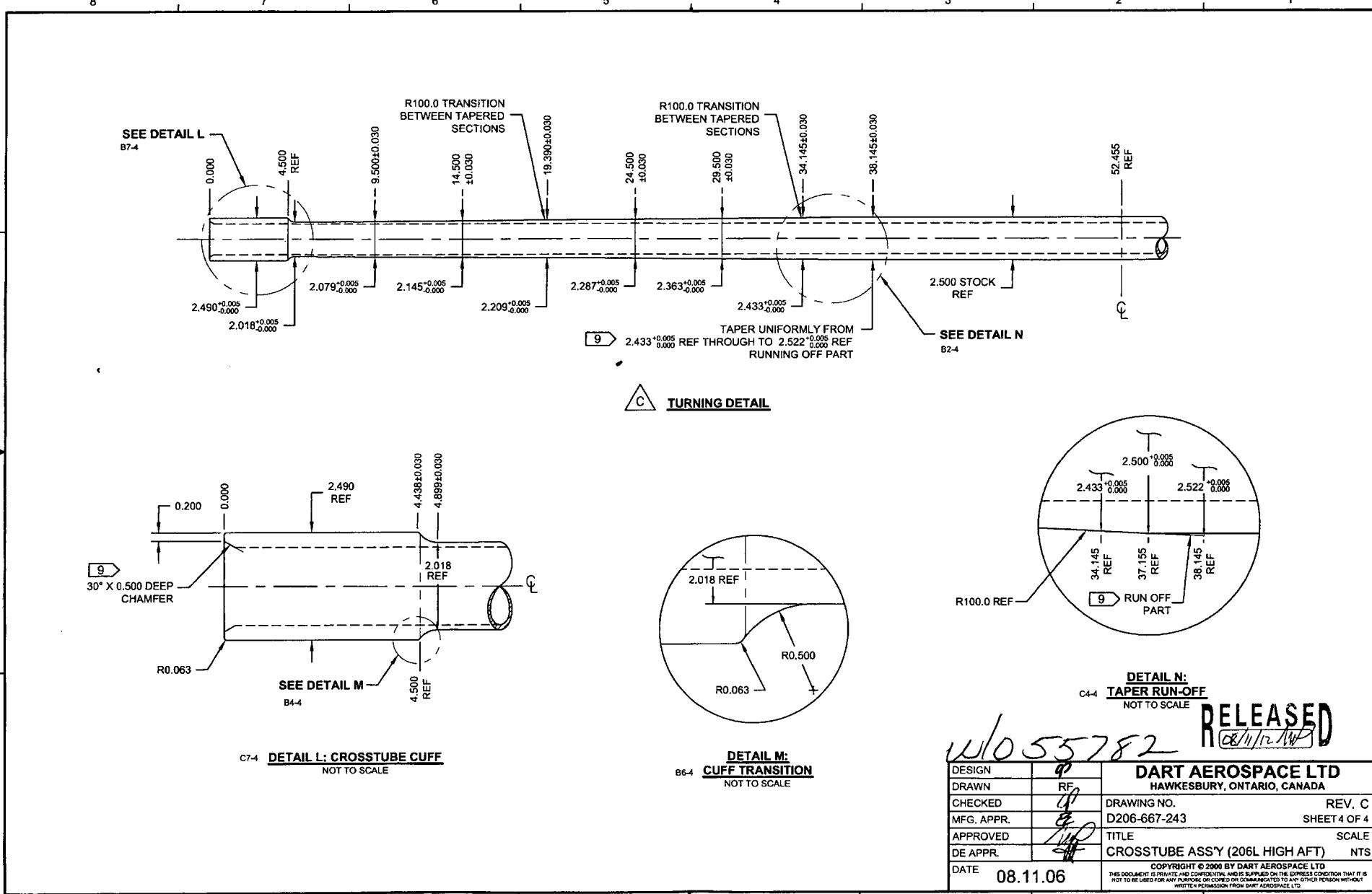


DESIGN	99	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	RF	DRAWING NO.		REV. C
CHECKED	10	D206-667-243		SHEET 2 OF 4
MFG. APPR.	EE	TITLE		SCALE
APPROVED	<i>[Signature]</i>	CROSSTUBE ASSY (206L HIGH AFT)		NTS
DE APPR.	<i>[Signature]</i>			
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		



RELEASED
06/11/12 MWP

DESIGN	<i>9</i>	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>19</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>9</i>	D206-667-243	SHEET 3 OF 4
APPROVED	<i>19</i>	TITLE	SCALE
DE APPR.	<i>19</i>	CROSSTUBE ASSY (206L HIGH AFT) NTS	
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD	
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5.0 PARTS LIST

S

Item	Qty -011	Qty -013	Qty -015	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X									D206-667-011	SPACER BLOCK KIT
		X								D206-667-013	NUT PLATE KIT (-101/-103/-105/-203/-205)
			X							D206-667-015	NUT PLATE KIT (-201)
				X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
					X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
						X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
							X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
								X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
									X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1			1							D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2				1						D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3					1					D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4						1				D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5								1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6									1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10			*2	*2	*2		*2			D2891-1	SUPPORT
11							*2			D2892-1	SUPPORT
12										D2894-1	SUPPORT
13			*2	*2	*2		*2			D2856-400-694	ABRASION STRIP
14							*2			D2856-400-773	ABRASION STRIP
15										D2856-600-851	ABRASION STRIP
16			*4	*4	*4		*4			MS21920-20	CLAMP
17							*4			MS21920-22	CLAMP
18										MS21920-24	CLAMP
19			4	4	4			4		AN5-32A	BOLT
20								4		AN5-34A	BOLT
21			4	4	4	4	4	4		MS21042L5	NUT (OR MS21042-5)
22			8	8	8	8	8	8		AN960JD516	WASHER
23										D3190-1	CHAFING SHIELD
30	8									AN4-6A	BOLT
31	8									AN4-7A	BOLT
32	16									AN960JD416	WASHER
33	2									D3193-041	SPACER BLOCK ASSEMBLY
40	2		*2		*2	*2	*2	*2		D2873-043	NUT PLATE
41	2		*2		*2	*2	*2	*2		D2873-045	NUT PLATE
42		2		2						D2872-043	NUT PLATE
43		2		2						D2872-045	NUT PLATE
44	10		10		10					AN5-7A	BOLT
45	10	10		10		10	10	10		AN5-10A	BOLT
46	4	4	4	10	4		4			AN5-30A	BOLT
47	4						4	4		AN5-32A	BOLT
48	18	18	10	12	10	10	10	10		AN960JD516	WASHER
49	4	4		6						MS21042L5	NUT (OR MS21042-5)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/241/143/243, & D407-667-145/245 ASSEMBLIES ABOVE

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Revision: C
Date: 05.07.26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 15318

PAGE 1 OF 1

DAT 400 PLACE

LINDA JOHNSON

1272 ABERDEEN ST.

HAWKESBURY ON, K6H 1K7

DATE

FEB 16-2010

TIME

AM

PM

ACUREN JOB NO.

199-1C-0651

PO/WO NO.

11364

WORK LOCATION

SHOP

ACCEPTANCE STD.

ASTM 1417

REV./DATE

2007

F.P.I. ON CROSS TUBES

EXAMINED

FC'S

SCRIPTION

PROCEDURE NO. LT-~~0002~~ REV./DATE

TECHNIQUE NO. LT-~~0002~~ REV./DATE

MATERIAL LIQUID ALUMINUM THICKNESS

WET FLUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT 100% EXTERNAL

DETAILS

<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED
BRAND <u>ULTRAFUX</u>		BLACK LIGHT S/N <u>16439</u>	<input checked="" type="checkbox"/> OUTPUT > 1000 μ W/cm ²	<input type="checkbox"/> AMBIENT < 2 fc
INT 2607	MINIMUM DWELL TIME 4.5 TO 10 MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE	
INT REMOVER <u>2601</u>	MINIMUM DRY TIME >10 MIN.	OTHER <u>LAB 100</u>		
PER <u>SKD</u>	MINIMUM DWELL TIME 10 MIN.	LIGHT METER S/N <u>1698866</u>	CAL DUE DATE	<u>MAY 7-2010</u>
PER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY				

URFACE

CONDITION <input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input checked="" type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input type="checkbox"/> CLEAN BARE METAL
TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F	<input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F		<input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F	<input type="checkbox"/> > 52°C/125°F

TS- (METRIC IMPERIAL)

CROSS TUBE W.C. 55759 ✓
CROSS TUBE W.C. 55760 ✓
CROSS TUBE W.C. 55779 ✓
CROSS TUBE W.C. 55780 ✓

CROSS TUBE W.C. 55791 ✓
CROSS TUBE W.C. 55782 ✓
CROSS TUBE W.C. 55134 ✓
CROSS TUBE W.C. 55135 ✓

ALL ITEMS EXAMINED ON
THIS REPORT HAVE BEEN
ACCEPTED TO STANDARD.

MW
10 02 17

services
ent of Acuren Group Inc. to perform services extends only to those services provided in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood
descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as
warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the
information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

of Care
ng the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or
implied or intended by Acuren Group Inc.

TURES

REPRESENTATIVE <u>Janet Johnson</u> PRINT <u>Janet Johnson</u>	SIGNATURE <u>Janet Johnson</u>	DTR # <u>E 27362</u>
CIAN (SIGNATURE): <u>Mike Johnson</u> (PRINT): <u>Mike Johnson</u>		REPORT REVIEWED BY:
1 ST TECHNICIAN <u>Mike Johnson</u> CGSB LEVEL <u>E</u> SNT LEVEL <u>E</u> CGSB REG. NO. <u>6606</u>	2 ND TECHNICIAN CGSB LEVEL _____ SNT LEVEL _____ CGSB REG. NO. _____	NAME <u></u> INITIALS <u></u>